

TMA 43 Optical Train

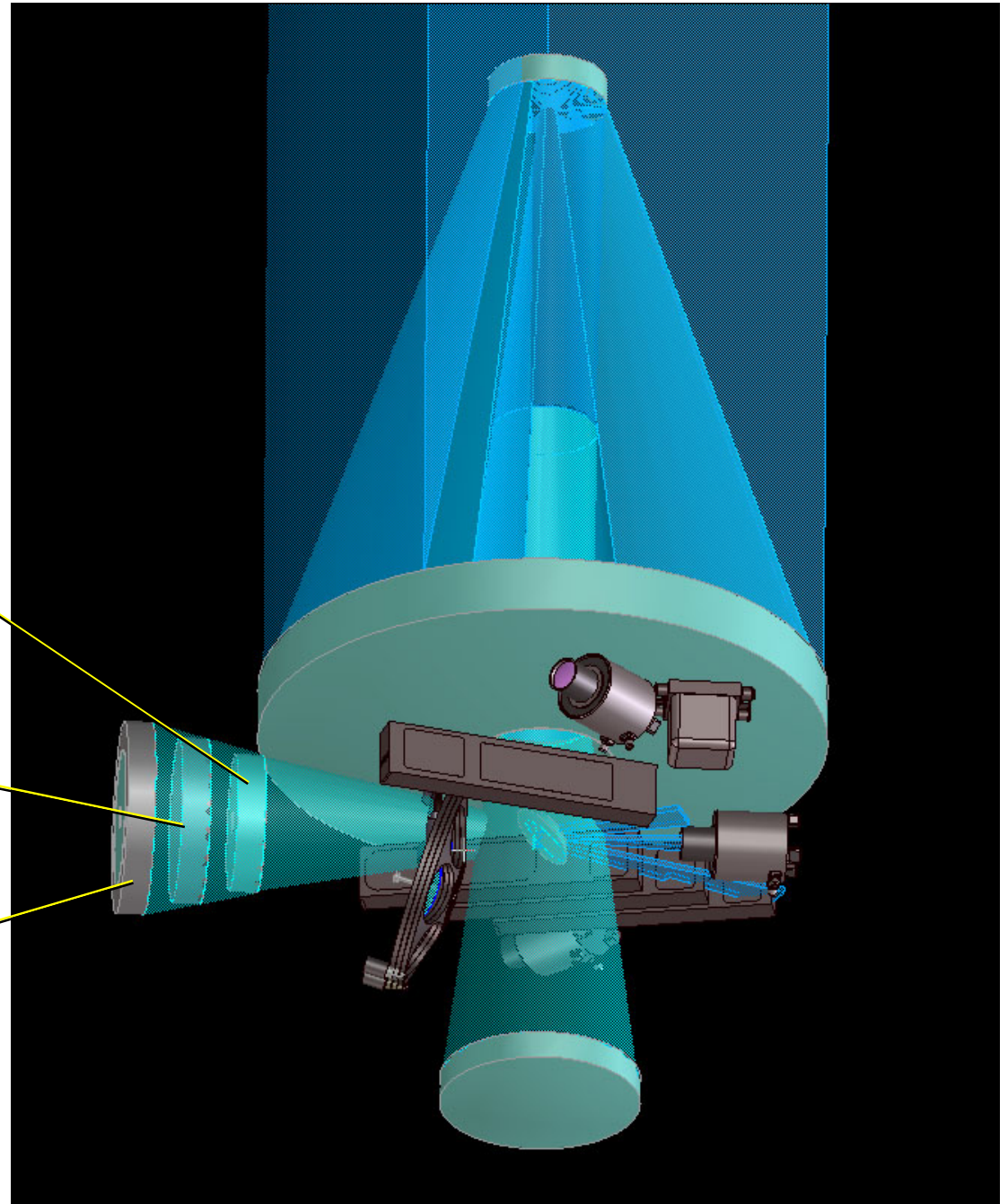
Extended to accommodate the CCD Imager at 1.2 and 1.4 meters from the Centerline.

The rest of the instrument bay equipment and TMA-43 Optical elements are in position.

CCD Image plane at 1.0 meters from C.L.

CCD Image plane at 1.2 meters from C.L.

CCD Image plane at 1.4 meters from C.L.



To visualize the implications of repositioning the CCD assembly, the model was set up to show three representative conditions:

0 deg rotation (Baseline TMA 43 Optical train)

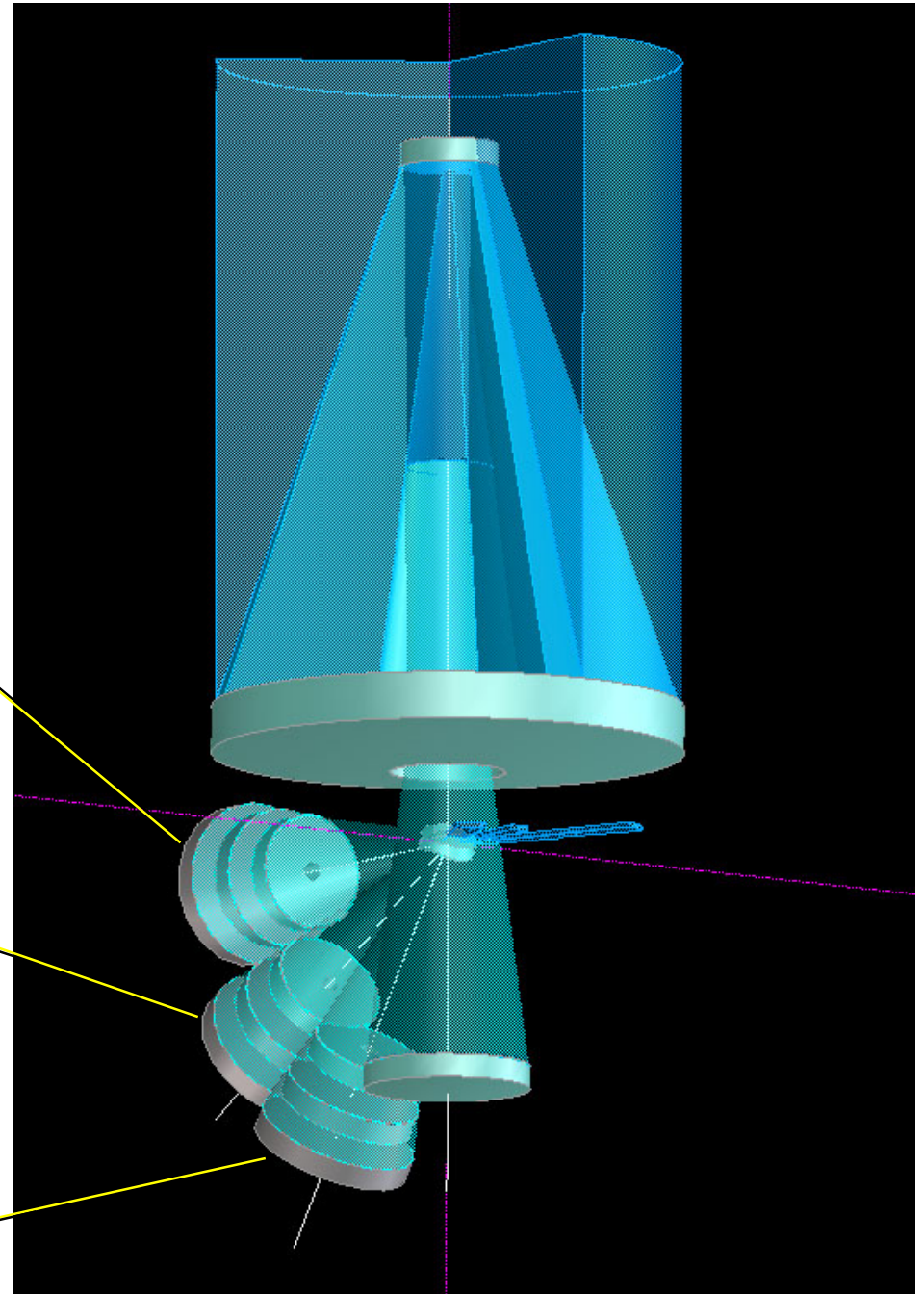
CCD @ 1.0 M from C.L. x 490 mm dia. Image plane.
CCD @ 1.2 M from C.L. x 590 mm dia. Image plane.
CCD @ 1.4 M from C.L. x 690 mm dia. Image plane.

30 deg rotation

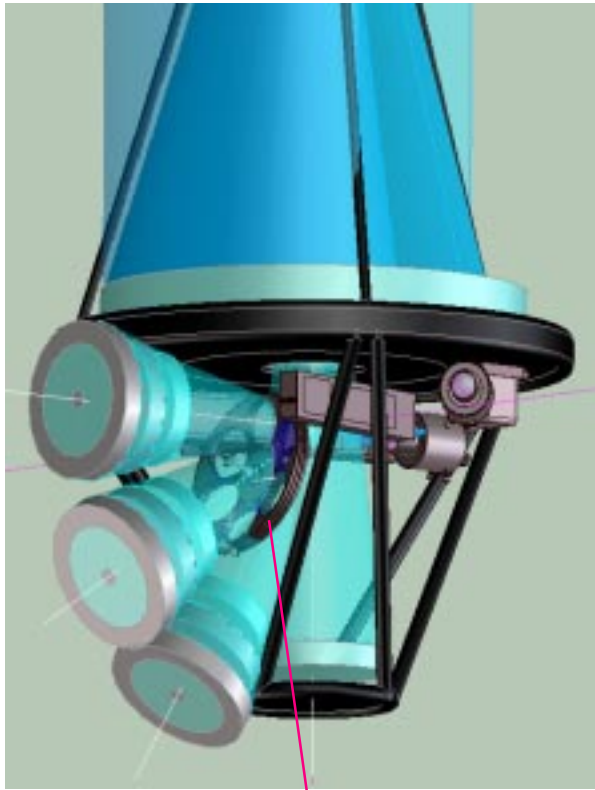
CCD @ 1.0 M from C.L. x 490 mm dia. Image plane.
CCD @ 1.2 M from C.L. x 590 mm dia. Image plane.
CCD @ 1.4 M from C.L. x 690 mm dia. Image plane.

60 deg rotation

CCD @ 1.0 M from C.L. x 490 mm dia. Image plane.
CCD @ 1.2 M from C.L. x 590 mm dia. Image plane.
CCD @ 1.4 M from C.L. x 690 mm dia. Image plane



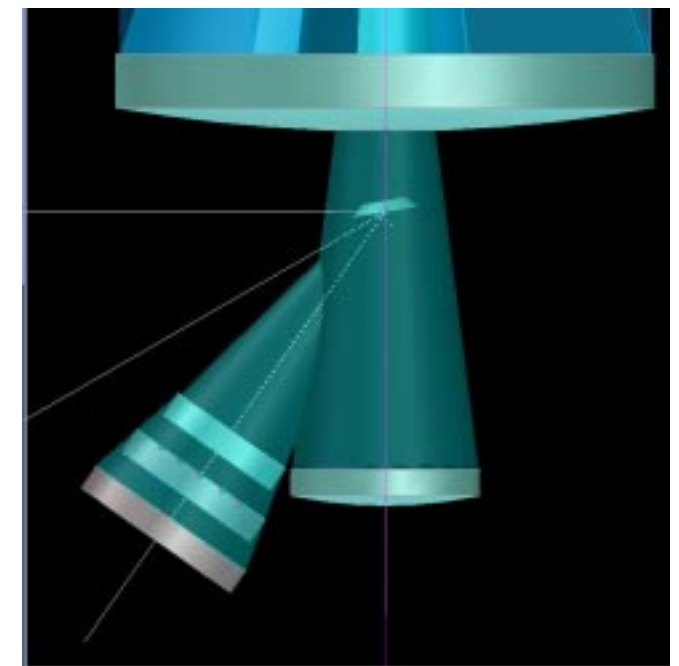
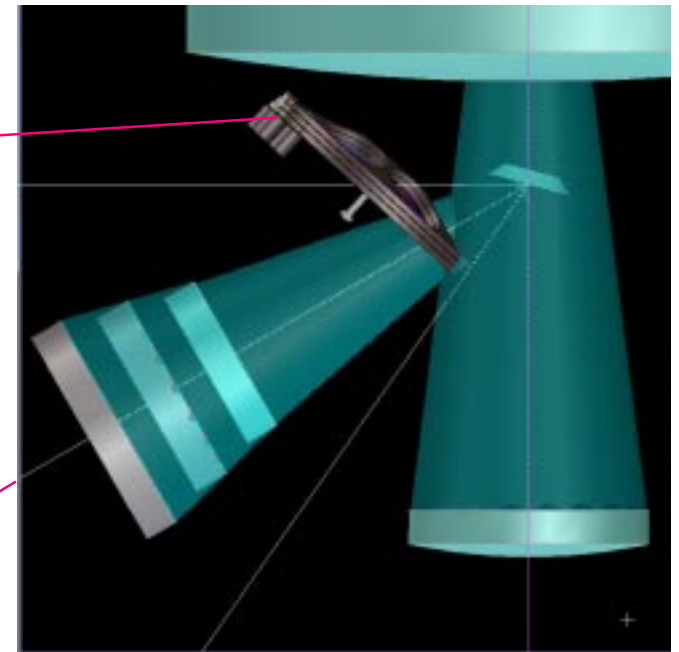
The three scenarios show a range of envelopes within the existing space frame structure



The filter assembly is shown in the baseline position

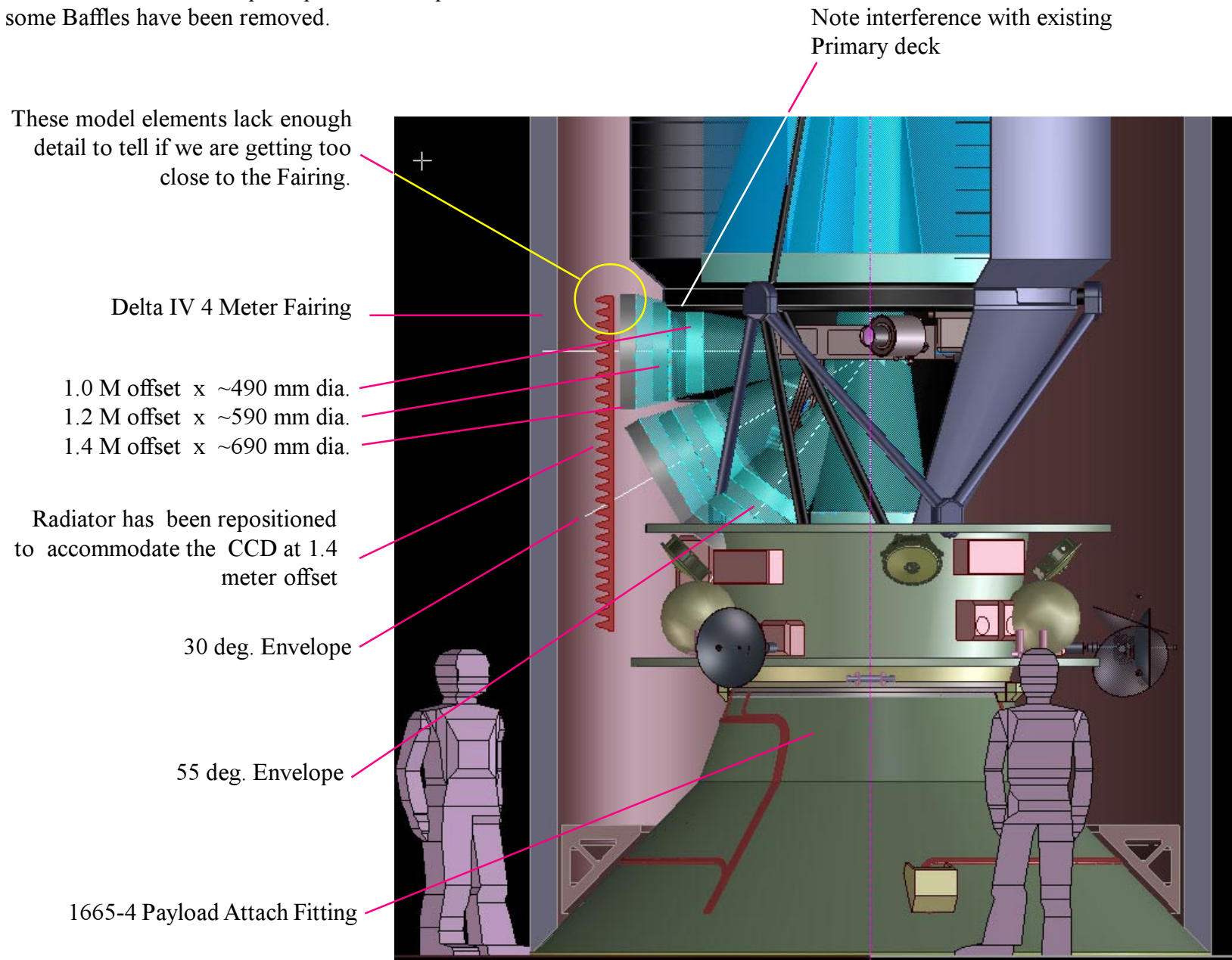
Filter assy has been rotated 180 deg. around the CCD axis to avoid obscuring the Secondary/Tertiary beam envelope

As the beam envelope is rotated, the filter assy interferes and has to move out and become larger.



At acute angles, the Filter assy must become very large.

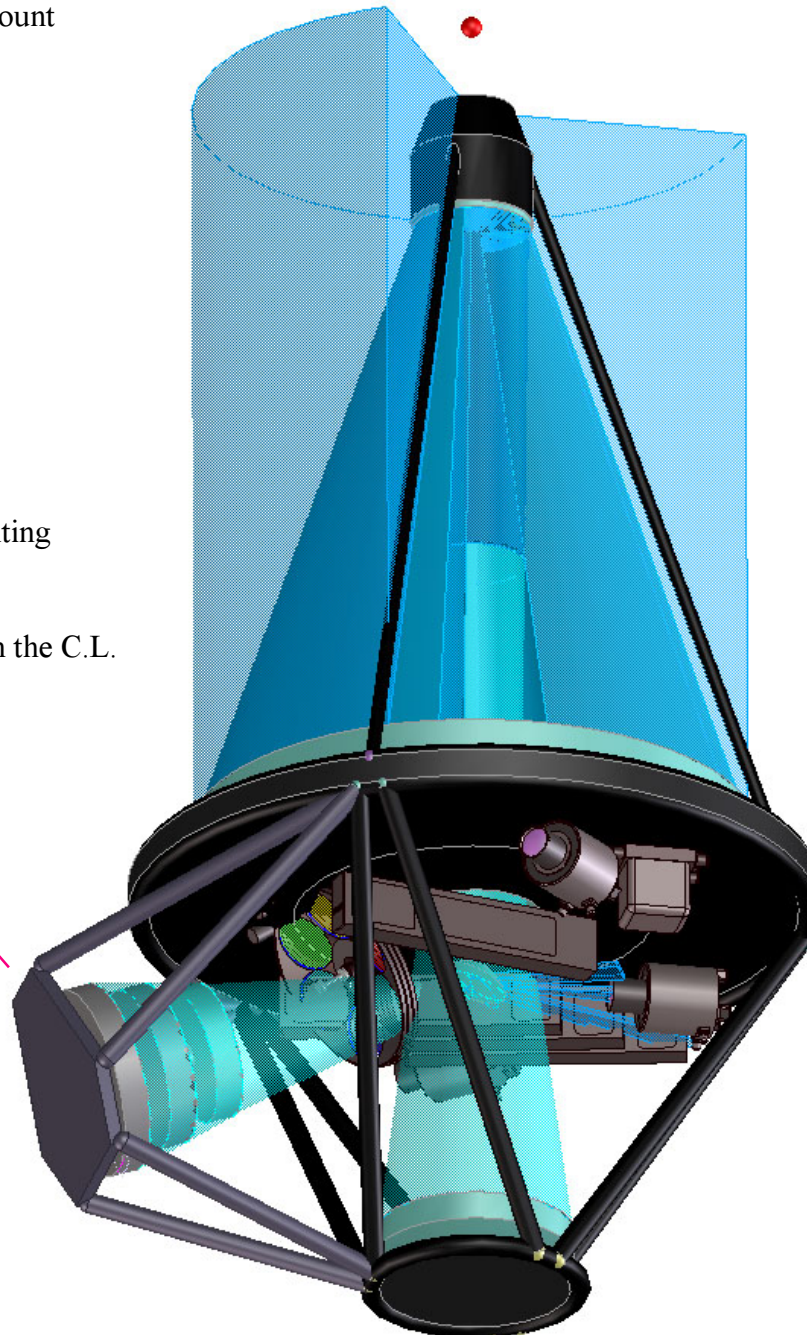
Observatory and Launch Vehicle assembled in Launch configuration.
All three CCD Beam scenarios are superimposed onto Optical Bench and Buss.
Shields and some Baffles have been removed.



Optical Bench with spaceframe CCD Mount

All of the scenarios allow a stable mounting structure for the CCD.

Shown here, the CCD is 1.4 meters from the C.L. rotated 20 deg.



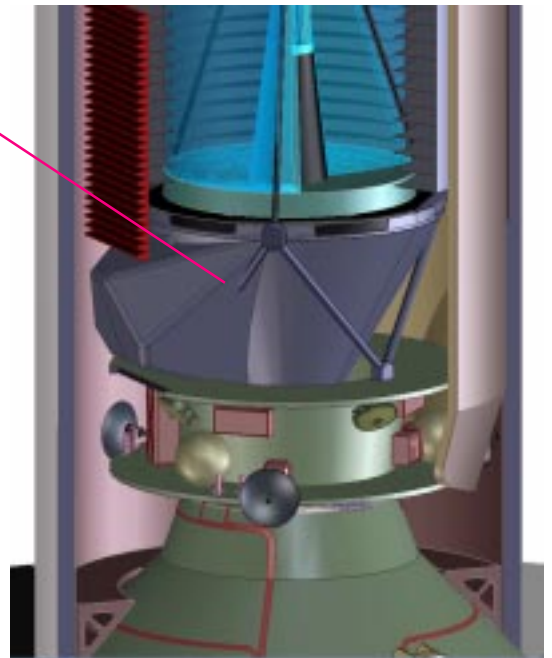
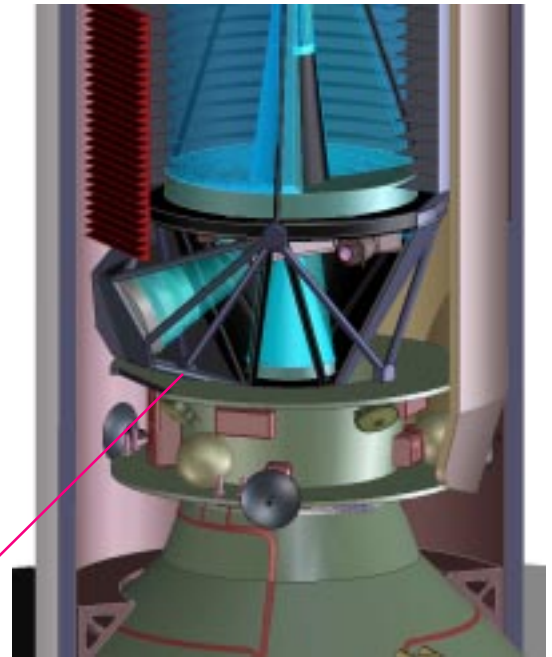
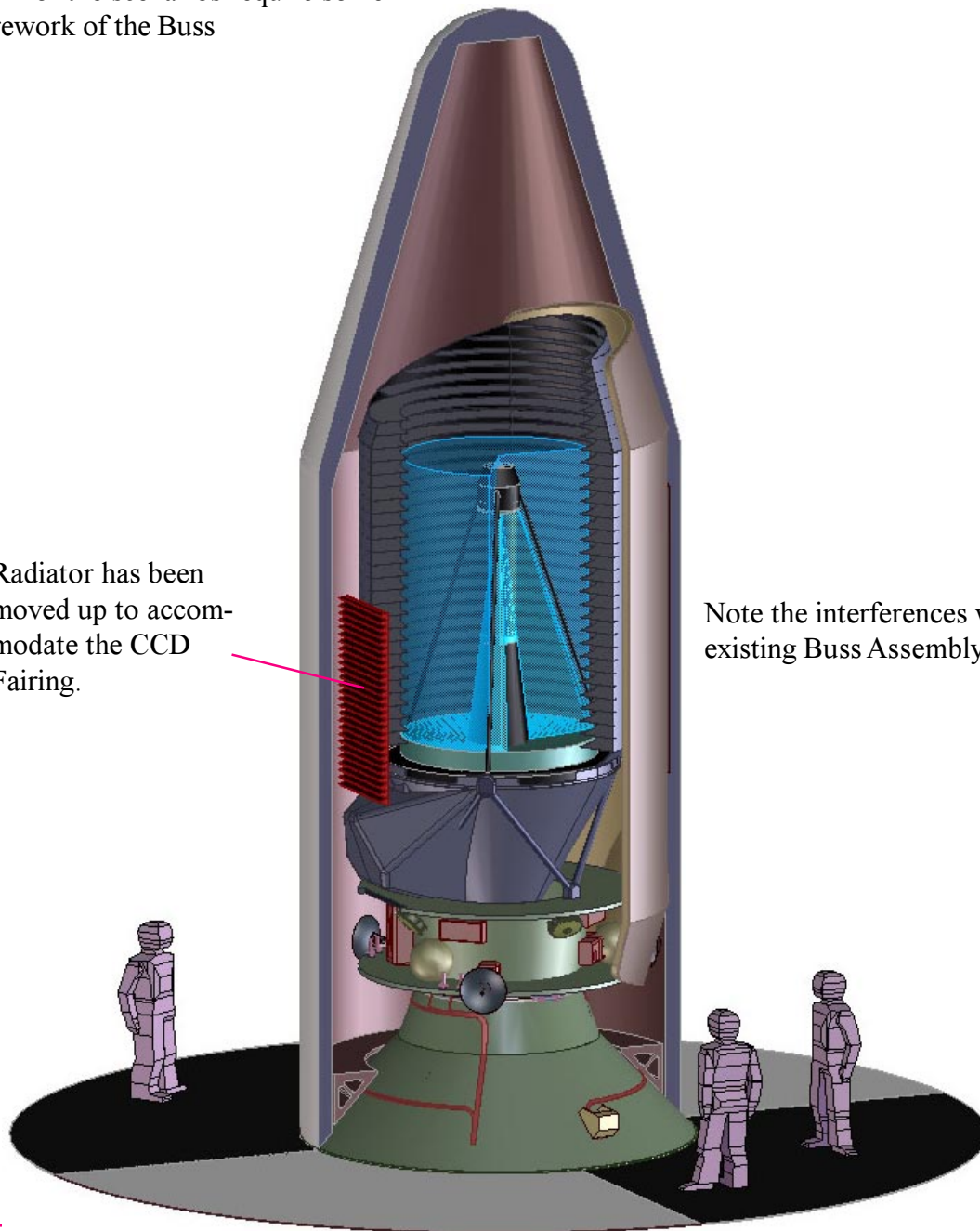
Optical Bench with Baffles

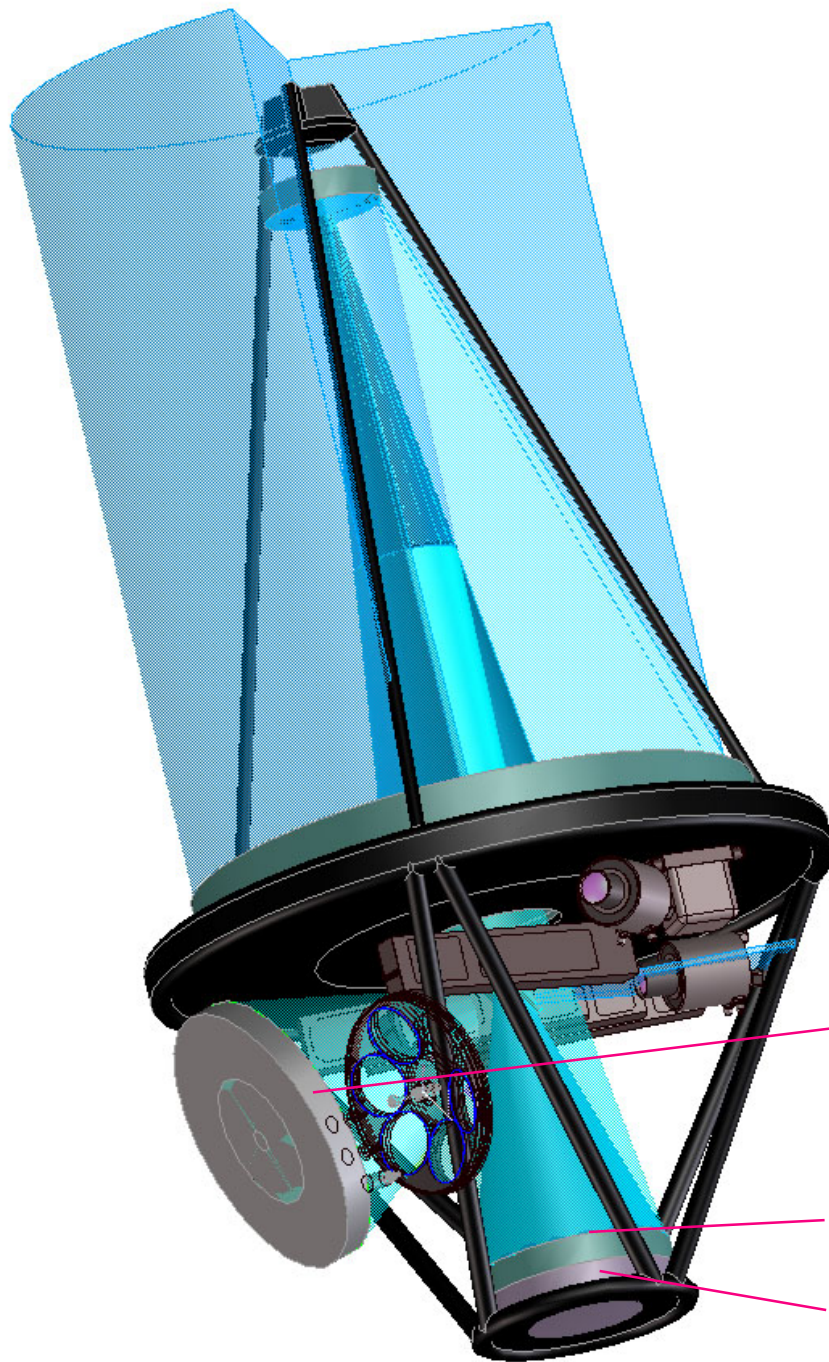


All of the scenarios require some rework of the Buss

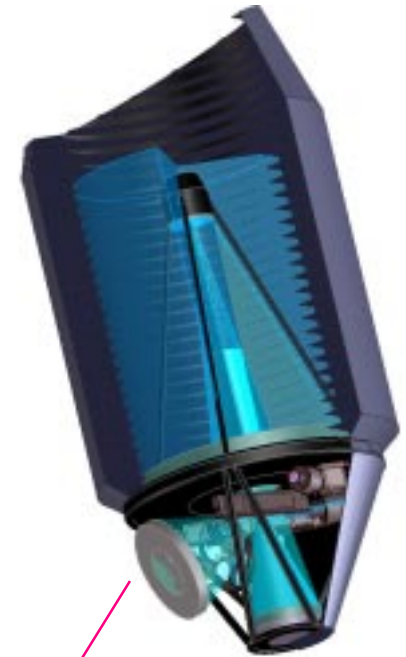
Radiator has been moved up to accommodate the CCD Fairing.

Note the interferences with the existing Buss Assembly





Hypothetical 1 Meter dia. CCD assy
rotated 20 deg. from baseline, with
"stretched TMA-43 beam envelope.



1 Meter dia. CCD @ 1 Meter
from Optical C.L.

Tertiary @ baseline position

Tertiary @ baseline + 100 mm

